

CLAIMS

I claim:

1. A network for wireless transmission of data to a destination device comprising:
 - a wireless router coupled to receive the data from a data source, the wireless router including a first transceiver to transmit the data on a first frequency channel;
 - a wireless repeater having a second transceiver to receive the data on the first frequency channel and a third transceiver to re-transmit the data on a second frequency channel different than the first frequency channel; and
 - a wireless receiver having a fourth transceiver to receive the data on the second frequency channel from the wireless repeater, the receiver being coupled to the destination device.
2. The network of claim 1 wherein the first, second, third, and fourth transceivers operate in either a 2.4GHz frequency band or a 5GHz frequency band.
3. The network of claim 1 further comprising one or more additional wireless repeaters, each having an upstream transceiver to receive the data and a downstream transceiver to re-transmit the data, the one or more additional wireless repeaters being disposed so as to extend a range of the network between the wireless router and the wireless receiver.
4. The network of claim 3 wherein each of the one or more additional repeaters further comprises an additional transceiver to transmit the data to one or more additional destination devices located in a nearby vicinity.
5. The network of claim 1 further comprising:

means for self-configuring the first and second frequency channels of the wireless router and the wireless repeater.

6. The network of claim 1 wherein the first, second, third, and fourth transceivers operate in compliance with an 802.11x standard.

7. The network of claim 1 wherein the destination device comprises a television.

8. The network of claim 1 wherein the destination device comprises a computer.

9. A network for wireless transmission of a data stream in a building comprising:

a plurality of access points, including:

 a first access point coupled to receive the data stream from a source, the first access point transmitting the data stream at a first data rate;

 a plurality of additional access points distributed about the building, each of the one or more additional access points including an upstream transceiver to receive the data stream on a first channel and a downstream transceiver to re-transmit the data stream at substantially the first data rate on a second channel.

10. The network of claim 9 wherein the first access point comprises a wireless tuner having a transceiver that transmits in a 5GHz frequency band.

11. The network of claim 9 wherein the first data rate is 30Mbps or greater.

12. The network of claim 9 wherein each of the additional access points further comprise an additional transceiver for communications with one or more wireless destination devices located in a nearby vicinity.
13. The network of claim 12 wherein the additional transceiver operates in a 2.4GHz frequency band.
14. The network of claim 10 further comprising:
 - a computer-executable program to configure the access points to operate in accordance with a set of channels that provides an optimal performance result.
15. The network of claim 14 wherein the computer-executable program runs on a processor of the first access point.
16. The network of claim 14 wherein the first access point and the additional access points are arranged in a tree topology.
17. The network of claim 14 wherein the set of channels occupy either a 2.4GHz frequency band or a 5GHz frequency band.
18. A network for real-time wireless transmission of high bandwidth data comprising:
 - a plurality of access points, each of the access points having a first transceiver configured to transmit the data to one or more wireless destination devices located in a nearby vicinity, and to receive data transmitted from the one or

more wireless destination devices, the first transceiver operating in a first frequency band, the plurality of access points including:

a first access point coupled to receive the data from a source, the first access point having a second transceiver that transmits the data downstream across the network in a second frequency band at a specified data rate, the second frequency band including a plurality of channels;

a plurality of repeaters arranged in a topology, wherein each of the repeaters having an upstream transceiver to receive the data on one channel and a downstream transceiver to re-transmit the data on a different channel at substantially the specified data rate; and

means for allocating specific channels to the access points to provide an optimal performance result.

19. The network of claim 18 wherein the first frequency band is a 2.4GHz band.

20. The network of claim 18 wherein the first access point comprises a satellite tuner.

21. The network of claim 18 wherein the first access point comprises a cable television tuner.

22. The network of claim 18 further comprising a receiver to receive the data from one of the wireless repeaters and to output the data to the one or more wireless destination devices.

23. The network of claim 18 wherein the second frequency band comprises a 5GHz frequency band.

24. The network of claim 18 wherein the specified data rate is 30Mbps or greater.

25. The network of claim 19 wherein each of the repeaters comprises circuitry that determines transmission signal quality between the repeater and another access point, the circuitry including an output display panel that provides a visual indication of the transmission signal quality.

26. A network for real-time wireless transmission of high bandwidth data comprising:

a plurality of access points, each of the access points having a first transceiver configured to transmit the data to one or more client devices located in a nearby vicinity, and to receive the data transmitted from the one or more client devices, the first transceiver operating in a first frequency band, the plurality of access points including:

a first access point coupled to receive the data from a source, the first access point having a second transceiver that transmits the data downstream across the network in a second frequency band at a specified data rate, the second frequency band including a plurality of channels;

a plurality of repeaters arranged in a tree topology, each of the repeaters having an upstream transceiver to receive the data on one channel and a downstream transceiver to re-transmit the data on a different channel at substantially the specified data rate; and

a computer-executable program, execution of the computer-executable program causing the access points to be configured to operate in accordance with a particular channel allocation.

27. The network of claim 26 further comprising means for adapting the network to an interference source by re-execution of the computer-executable program to re-configure the access points to operate in accordance with a new set of channels.

28. The network of claim 26 wherein the first access point comprises a wireless satellite tuner.

29. The network of claim 26 wherein the first access point comprises a wireless cable television tuner.

30. The network of claim 26 further comprising a receiver to receive the data from one of the wireless repeaters and to output the media content to a destination device.

31. The network of claim 26 wherein the second frequency band comprises a 5GHz frequency band.

32. The network of claim 26 wherein the specified data rate is 30Mbps or greater.

33. The network of claim 26 wherein each of the repeaters comprises circuitry that determines transmission signal quality between the repeater and another access point, the circuitry including an output display panel that provides a visual indication of the transmission signal quality.

34. A system for high-bandwidth wireless transmission of data to a plurality of destination devices disposed about a building, comprising:

first and second wireless networks, each wireless network comprising:

a plurality of access points, each of the access points having a first transceiver configured to transmit the data to one or more wireless client devices located in a nearby vicinity, and to receive the data transmitted from the one or more wireless client devices, the first transceiver operating in a first frequency band, the plurality of access points including:

a first access point coupled to receive the data from a source, the first access point having a second transceiver that transmits the data in a second frequency band at a specified data rate, the second frequency band including a plurality of channels;

a plurality of repeaters arranged in a topology, wherein each of the repeaters has an upstream transceiver to receive the data on one channel and a downstream transceiver to re-transmit the data on a different channel at substantially the specified data rate.

35. The system of claim 34 wherein each network further comprises a computer-executable program, execution of the computer-executable program causing the access points to be configured to operate in accordance with a set of channels.

36. The system of claim 34 wherein each of the first and second wireless networks further comprise a wireless receiver to receive the data from one of the wireless repeaters and to output the data to one of the destination devices.

37. The system of claim 34 wherein the second frequency band comprises a 5GHz frequency band.

38. The system of claim 34 wherein the first data rate is 30Mbps or greater.

39. A network for wireless transmission of a data stream in a building comprising:

a plurality of access points each access point having a first transmission range of maximum bandwidth and a second transmission range of signal interference, the access points being arranged in a topology wherein each access point is spaced-apart from a nearest neighboring access point by a first distance less than the first transmission range, the plurality of access points including:

a first access point coupled to receive the data stream from a source, the first access point transmitting the data stream on a first channel of a first frequency band at a first data rate, the first frequency band having a plurality of channels;

one or more additional access points to receive the data stream and to re-transmit the data stream in the first frequency band at substantially the first data rate;

wherein each of the access points transmits on one of the plurality of channels, any pair of the access points transmitting on a same channel being separated by a distance greater than the second transmission range.

40. The network of claim 39 wherein the first access point comprises a wireless satellite tuner.

41. The network of claim 39 wherein the first access point comprises a wireless data router.

42. The network of claim 39 wherein the one or more additional access points each comprise an upstream transceiver to receive the data stream on a particular channel and a downstream transceiver to re-transmit the data stream on a different channel.

43. The system of claim 39 wherein the first frequency band comprises a 5GHz frequency band.

44. The system of claim 39 wherein the first data rate is 30Mbps or greater.